UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/655,535	09/05/2003	Naveen Kumar Kakani	59643.00303	5576

32294	7590	06/17/2005

SQUIRE, SANDERS & DEMPSEY L.L.P.
14TH FLOOR
8000 TOWERS CRESCENT
TYSONS CORNER, VA 22182

EXAMINER
LAM, DUNG LE

ART UNIT	PAPER NUMBER
2687	

DATE MAILED: 06/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _05 September 2003_.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-20_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1-20_ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on _05 September 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All b)☐ Some * c)☐ None of:
    1.☐ Certified copies of the priority documents have been received.
    2.☐ Certified copies of the priority documents have been received in Application No. _____.
    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
       application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the
> applicant for patent, except that an international application filed under the treaty defined in section
> 351(a) shall have the effects for purposes of this subsection of an application filed in the United States
> only if the international application designated the United States and was published under Article 21(2)
> of such treaty in the English language.

2.   Claims **1 and 10** are rejected under 35 U.S.C. 102(e) as being anticipated by

Zimmerman et al (US Patent No. 6785252).

3.   Regarding **claim 1**, Zimmerman teaches a method of allocating uplink resources,

comprising: estimating traffic in an uplink; and allocating resources based on said step of

estimating (performs an estimate of the uplink traffic to allocate uplink bandwidth, Col. 24, lines

26-29).

4.   Regarding **claims 10**, it is an apparatus claim corresponding to claim 1. Therefore, it is

rejected for the same reasons as claim 1 respectively (see claim 1 above).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art
> are such that the subject matter as a whole would have been obvious at the time the invention was made to
> a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

6.   Claims **2 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Zimmerman et al (US Patent No. 6785252) in view of **Wallentin et al.** (US Publication

2005/0013287).

7.   Regarding **claim 2**, Zimmerman teaches a method according to claim 1 (see claim 1

above). However, Zimmerman fails to expressly teach that the step of associating the traffic

with a bulk TCP uplink data transfer, and estimating the traffic in the uplink for a given transfer

block to be identical as for a previous transfer block. In an analogous art, Wallentin teaches a

type of bulk TCP traffic, which is known in the art to be bursty and asymmetric (Col. 4,

paragraph 36). Furthermore, Wallentine discloses a method of using the content of received

data packets sent in the uplink or downlink to make predictions of the expectable traffic on the

uplink or downlink (Col. 3, paragraph 33), thereby suggesting that uplink traffic can be estimated

based on the previous sent data. Therefore, it would have been obvious to a person of ordinary

skill in the art at the time of the invention was made to provide a method of bandwidth allocation

of an uplink of bulk TCP traffic type to be based on the estimation of the previous data transfer

block to utilize radio resource more efficiently.

8.   Regarding **claims 11**, it is an apparatus claim corresponding to claim 2. Therefore, it is

rejected for the same reasons as claim 2 respectively (see claim 2 above).

9.   Claims **3 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Zimmerman et al (US Patent No. 6785252) in view of **Wallentin et al.** (US Publication

2005/0013287) in further view of **Love et al.** (US Publication 2004/0219917).

10.   Regarding **claim 3**, Zimmerman teaches a method according to claim 1 (see claim 1

above). However, Zimmerman fails to teach a step of associating the traffic with a bulk TCP

downlink data transfer, and wherein the estimating step comprises estimating the traffic in the

uplink for a given transfer block to be an acknowledgement of the traffic in a downlink. In an

analogous art, Wallentin teaches that one of the expected major protocol is TCP which can

have two type of data: "interactive" or "background" which is also known in the art as bulk TCP

since it is characterized as bursty and asymmetric (Col. 4, paragraph 36). Therefore, it would

have been obvious to a person of ordinary skill in the art at the time of the invention was made

to have a bandwidth allocation that account for the characteristics of bulk TCP to have a more

robust and versatile allocation scheme that can handle bulk TCP data.   In addition, Love

teaches a method of making use of the acknowledgement to determine the uplink transmission

activity (Col. 7, paragraph 64). It is also known in the art, that in TCP transmission, ACK is used

to detect congestion and thus the system stops sending more packets if ACK is not received.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the

invention was made to estimate the uplink traffic based on the acknowledgement of the

downlink traffic to increase resource efficiency.

11.   Regarding **claims 12**, it is an apparatus claim corresponding to claim 3. Therefore, it is rejected for the same reasons as claim 3 respectively (see claim 3 above).

12.   Claims **4 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Zimmerman et al** (US Patent No. 6785252) in view of **Wallentin et al.** (US Publication 2005/0013287) in further view of **Haartsen** (US Publication 2005/0048985).

13.   Regarding **claim 4**, Zimmerman teaches a method according to claim 1 (see claim 1 above). However, Zimmerman fails to teach a step of associating the traffic with an interactive TCP data transfer, and wherein the step of estimating comprises estimating the traffic in the uplink to be identical to the traffic in a downlink. In an analogous art, Wallentin teaches that one of the expected major protocols is TCP, which can have two type of data: "interactive" or "background". (Col. 4, paragraph 36). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to have a bandwidth allocation that account for the characteristics of bulk TCP to have a more robust and versatile allocation scheme that can handle interactive TCP data. In another analogous art, Haartsen teaches a method of radio resource management where the bandwidth in the uplink is identical to the bandwidth in the downlink (Col. 4, paragraph 42). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify the bandwidth allocation to estimate the uplink traffic to be the same as the downlink to make a more real-time based and flexible bandwidth allocation algorithm.

14.   Regarding **claims 13**, it is an apparatus claim corresponding to claim 4. Therefore, it is rejected for the same reasons as claim 4 respectively (see claim 4 above).

15.   Claims **5 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Zimmerman et al (US Patent No. 6785252) in view of **Love et al.** (US Publication

2004/0219917) in further view of **Patel** (US Patent No. 6697378).

16.   Regarding **claim 5**, Zimmerman teaches a method according to claim 1 (see claim 1

above).   Zimmerman fails to teach a step of estimating comprises estimating the traffic in the

uplink to include an acknowledgement of the traffic in a downlink. In an analogous art, Love

teaches a method of making use of the acknowledgement to determine the uplink transmission

activity (Col. 7, paragraph 64).   In addition, Patel also disclose that TCP uses window-based

flow control in acknowledgement to advertise how much space the receiver has available for

additional data (Col. 1 lines 60-67). Therefore, it would have been obvious to a person of

ordinary skill in the art at the time of the invention was made to modify the estimating traffic step

to include an acknowledgement of the traffic of the downlink to provide a more efficient use

resource.

17.   Regarding **claims 14**, it is an apparatus claim corresponding to claim 5. Therefore, it is

rejected for the same reasons as claim 5 respectively (see claim 5 above).

18.   Claims **6 –7 and 15 -16** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Zimmerman et al (US Patent No. 6785252) in view of **Haartsen** (US Publication

2005/0048985).

19.   Regarding **claim 6**, Zimmerman teaches a method according to claim 1 (see claim 1

above).   However, Zimmerman fails to teach the step of estimating comprises estimating the

uplink based upon a downlink traffic. In another analogous art, Haartsen teaches a method of

radio resource management where the bandwidth in the uplink is identical to the bandwidth in

the downlink (Col. 4, paragraph 42). Therefore, it would have been obvious to a person of

ordinary skill in the art at the time of the invention was made to modify the bandwidth allocation

to estimate the uplink traffic to be based on the downlink to make a more real-time based and

flexible bandwidth allocation algorithm.

20.   Regarding **claim 7,** Zimmerman and Haartsen teach a method according to claim 6 (see

claim 6 above).   Haartsen further teaches the step of estimating comprises estimating an uplink

traffic to be an identical as a downlink traffic (bandwidth in the uplink is identical to the

bandwidth in the downlink, Col. 4, paragraph 42). Therefore, it would have been obvious to a

person of ordinary skill in the art at the time of the invention was made to modify the bandwidth

allocation to estimate the uplink traffic to be the same as the downlink to make a more real-time

based bandwidth allocation algorithm.

21.   Regarding **claims 15 and 16**, it is an apparatus claim corresponding to claim 6 and 7

respectively. Therefore, it is rejected for the same reasons as claim 6 respectively (see claim 6

and 7 above).

22.   Claims **8, 9, 17 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Zimmerman et al (US Patent No. 6785252) in view of **Haartsen** (US Publication

2005/0048985) in further view of **Patel** (US Patent No. 6697378).

23.   Regarding **claim 8**, Zimmerman and Haartsen teach a method according to claim 6 (see claim 6 above).   However, they fail to teach a step of estimating an uplink traffic to be an acknowledgement of the downlink traffic. In the same field of endeavor, Patel also disclose that TCP uses window-based flow control in acknowledgement to advertise how much space the receiver has available for additional data (Col. 1 lines 60-67). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to estimating the uplink traffic to be an acknowledgement of the traffic of 0the downlink to provide a more efficient usage of resource.

24.   Regarding **claim 9**, Zimmerman and Haartsen teach a method according to claim 6 (see claim 6 above).   However, they fail to teach a step of estimating comprises estimating an uplink traffic to be identical as a downlink traffic together with an acknowledgement of the downlink traffic. In the same field of endeavor, Patel also disclose that TCP uses window-based flow control in acknowledgement to advertise how much space the receiver has available for additional data (Col. 1 lines 60-67). In addition, it is known in the art that ACK can be sent by both uplink or downlink in TCP transmissions. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to estimate the uplink traffic to include both the ACK and data of the downlink to provide a more accurate bandwidth allocation scheme.

25.   Regarding **claims 17-18**, they are apparatus claims corresponding to claims 8-9 respectively. Therefore, they are rejected for the same reasons as claims 8-9 respectively (see claims 8-9 above).

26.   Claims **19** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Zimmerman**

et al (US Patent No. 6785252) in view of **Cave** (US Patent No. 6868273).

27.   Regarding **claims 19**, Zimmerman teaches all the limitations according to claim 10 (see

claim 10 above).   However, he fails to teach a mobile communication system in which the

estimating means uplink and an uplink allocation resource are provided in a radio access

network. In analogous art Cave teaches that a RAN is used to perform call admission control

for allocation evaluation. Therefore, it would have been obvious to a person of ordinary skill in

the art at the time of the invention was made to perform the estimating and allocation of the

uplink resource at the RAN.

28.   Claims **20** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Zimmerman**

et al (US Patent No. 6785252) in view of **Wallentin et al.** (US Publication 2005/0013287).

29.   Regarding **claims 20**, Zimmerman teaches all the limitations according to claim 10 (see

claim 10 above).   However, he fails to teach specifically a mobile communication system in

which the estimating means uplink and an uplink allocation resource are provided in a serving

General Packet Radio Service support node.   However, Wallentin teaches a method of

improving efficient usage of radio network resources (abstract), which may use any type of

traffic control nodes, which can be a serving support GPRS node **[0044]**. Therefore, it would

have been obvious to a person of ordinary skill in the art at the time of the invention was made

to estimate the bandwidth allocation at the SGSN.

Citation of Prior Art

1.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chapman et al. (US Patent Number 6028842) discloses a method of dynamic traffic conditioning.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Lam whose telephone number is (571) 272-6497. The examiner can normally be reached on M - F 8-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DL

LESTER G. KINCAID
PRIMARY EXAMINER